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Abstract

Modular scheduling was introduced in the academic year 1967-68 at North Miami Senior High School. After a year's operation under the Stanford School Scheduling System, an "at home" evaluation of the new program was made. Student grades on a cross-sectional basis did not suffer, but rather showed a slight improvement. Moderate improvement was also noted in class conduct and attendance. In the use of unstructured time, a positive change was also observed in students' attitudes toward study. Large/small group study was favorably accepted by students and teachers, but more attention to the small group design for indepth discussion and personal interaction is needed to provide even greater success. At the administrative level, general commitment to the program is widespread, yet agreement on philosophies and educational assumptions of the program could increase. Generally there has been a movement toward more individualized instruction. The report recommends that particular emphasis for further improvement be placed on staff differentiation and use as well as on further development of the new teaching techniques offered by modular scheduling. (IN)

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# AN ASSESSMENT OF A SENIOR HIGH SCHOOL MODULAR SCHEDULING PROGRAM

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During the school year 1966-67 a self-evaluation was conducted at North Miami Senior High School. One outgrowth of this self-study was the decision to begin, in the year 1967-68, to schedule students using the Stanford School Scheduling System. This flexible approach to scheduling, often referred to as "modular scheduling," has in recent years come to be accepted as a sound innovation offering many advantages when compared to traditional secondary school scheduling methods. The essence of the Stanford program is discussed at length in the book, *A New Design For High School Education.*[1]

This report was initiated upon the request of officials of the Dade County, Florida, Public Schools. More specifically, it was requested by those administrators who share direct responsibility for the development and ongoing evaluation of the program at North Miami Senior High School.

In September, 1967, North Miami Senior High School began the year using the Stanford Scheduling System. Although representatives from Stanford University have developed and are conducting a long term program of evaluation, local administrators felt that there was also a need for "at home" evaluation of the new program.

The study being reported should not be seen as an evaluation of modular scheduling *per se* or even as an overall assessment of the modular scheduling program at North Miami Senior High School. Rather, it is a point-in-time look at a large secondary school in its first year of operation under modular scheduling with the intent of making recommendations which might help that school to improve its program. The data gathered and the ensuing observations and recommendations are closely related to questions which local teachers, administrators and members of the community have asked.

Community interest manifested itself in general ways. Parents wanted to know if their children were, under the new program, still afforded educational opportunities which would enable them to enter and be successful in college. Were their grades as good? Were they "learning just as much?" The community was also concerned about the effects of increased independence upon students. Are students accepting this responsibility in a mature way? Are they learning self direction or just "goofing off?" The professional staff, however, was more concerned with specific ways in which the instructional program could be improved. They indicated a desire for someone to gather and synthesize data related to various aspects of the school program and to suggest specific ways in which that program might be enhanced.

It also should be pointed out that flexible scheduling, in and of itself, cannot improve a school. It cannot cause teachers to become more proficient. Nor can a flexible scheduling program cause student achievement to improve. Flexible scheduling can, however, provide a framework in which a school, seeking to improve, can make needed adjustments in its curricular configuration. The primary purpose, then, of the study being reported was to suggest recommendations which might be useful in making such adjustments at North Miami Senior High School.

For purposes of brevity and readability a detailed explication of all of the procedures used in the study are not provided in this document. Valid and commonly accepted data gathering and analytic techniques, however, were employed. Many of these procedures are described as they relate to various sections of this report.

[1]Robert N. Bush and Dwight W. Allen, *A New Design for High School Education: Assuming a Flexible Schedule* (New York: McGraw Hill, 1964).

## STUDENT ACHIEVEMENT GRADES, CONDUCT GRADES AND ATTENDANCE

Perhaps the questions asked most by the school staff, central office personnel and interested lay citizens related to whether or not students were "learning just as much," whether the conduct of students in class and out was as "good" this year as last, and whether student attendance had fallen off as a result of the new program.

The data examined here, especially report card grades and conduct grades, are perhaps not the most valid and sensitive data which could be used to answer these questions. They are, however, applicable to what primarily concerns the community and much of the staff and, in the absence of more sophisticated data, were used.

A thorough investigation of student grades, conduct grades and attendance, employing accepted sampling and analytic techniques, indicated the following:

1. Scholastic grades of the 1967-68 seniors do not differ significantly from those of 1966-67 seniors although the 1967-68 grades are slightly higher.

2. Scholastic grades of 1967-68 seniors do not differ significantly from the grades received by those same students as juniors in 1966-67 although their grades this year are slightly higher.

3. Scholastic grades of 1967-68 juniors do not differ significantly from the grades received by those same students as sophomores in 1966-67 although their grades this year are slightly higher.

4. Conduct grades of 1967-68 seniors do not differ significantly from those of 1966-67 seniors although the 1967-68 grades are slightly higher.

5. Conduct grades of 1967-68 seniors do not differ from the grades received by those same students as juniors in 1966-67 although their grades this year are slightly higher.

6. Conduct grades of 1967-68 juniors do not differ significantly from the grades those same students received as sophomores in 1966-67 although their grades this year are slightly higher.

7. The mean daily attendance of 1967-68 seniors is improved when compared to the mean daily attendance of those same students in 1966-67.

8. The mean daily attendance of 1967-68 juniors is improved when compared to the mean daily attendance of those same students during the 1966-67 school year.

9. There is evidence of significantly different class attendance patterns among 1967-68 seniors and 1967-68 juniors as compared to the class attendance patterns of those same students during the 1966-67 school year. Although the gross attendance of students has improved, it appears they are becoming more selective about the classes they attend. In other words, they seem to be attending those classes which are more interesting to them with greater regularity while attending other classes with less regularity. Student interviews support this finding. Many students said they did not regularly attend certain classes which were not

interesting to them or in which they thought they "could get the stuff" by themselves.

In summary, it can be safely said that the achievement grades of North Miami Senior High School students, their in-class conduct and their attendance definitely has not suffered as a result of the modular scheduling program. In fact, there is an overall positive trend apparent in the data which might be interpreted as an indication of improvement.

## CURRICULAR ACTIVITIES AND MATERIALS

The largest segment of the study related to assessing how well certain curricular activities and materials integral to a successful flexible scheduling program were being utilized at North Miami Senior High School. There was a need to know if certain procedures assumed to be in operation under the new program were, in fact, being carried out and with what success; also if certain materials related to those procedures were being used effectively.

Data were collected and analyzed with the intent to answer specific questions raised by the school staff and central office personnel. Some of these questions were:

1. How are students using their unstructured time? Is there any evidence that the availability of unstructured time is improving the attitudes and work habits of students? Are there ways in which students can be helped to use their unstructured time more wisely?

2. Are large group sessions accomplishing their objectives? Are they satisfying and interesting to students? Are there ways in which they can be improved?

3. Are small group sessions accomplishing their objectives? Are there ways in which small group experiences can be improved?

4. To what extent is the concept of "the performance based curricula" incorporated into the ongoing program? Are learning activity packages widely used? Are they appropriate in terms of curricular objectives? Are they interesting to students? How can they be improved?

5. Is maximum use being made of available audio-visual aids? Are audio-visual aids being used appropriately? Are there ways in which the use of audio-visual devices can further enhance the instructional program?

6. Is maximum use of the physical plant being made? What changes in the physical plant are needed to enhance the instructional program?

7. What are the most pressing problems which the staff at North Miami Senior High School face?

8. Are community resources being used effectively? Are there ways in which the community can be made a more integral part of the instructional program?

In an attempt to provide answers to some of these questions and make recommendations relating to them, the following data collection strategy was used:

An *ad hoc* committee of North Miami Senior High School teachers and administrators, in cooperation with the writers, constructed questionnaires relating to the above question areas. These questionnaires, soliciting judgments and recommendations, were administered to the entire professional staff.

It was also assumed that many very valuable observations and recommendations might come from the student body. The assumption that students would make insightful and responsible recommendations was, in fact, a valid one and, in the opinion of the

writers, should be seen as a central part of the school's ongoing evaluation. Parallel forms of the questionnaire administered to the professional staff were administered to representative stratified random samples of the student body. In addition to the use of student questionnaires, certain data and opinions were also solicited through structured interviews with students.

A question often asked by visitors to a school providing unscheduled time to students is, "What are all these students doing in the hall and on the grounds?" In a specific attempt to answer this question, the writers interviewed students in the hall and on the grounds *during* instructional modules. Although the results of such interviews might be somewhat tenuous, it was the writers' opinion that students responded in a mature and honest way.

Data relating to the above questions were also gathered through observations. The writers visited, unannounced, large and small group sessions as well as study and laboratory areas on different days and at different times. In addition, several browsing observations of small group sessions were made.

*Student Use of Unstructured Time*

The one aspect of the new program about which the professional staff and community seems to be most concerned is the unstructured time made available to students. Through the use of a variety of data gathering approaches, the writers attempted to arrive at valid generalizations about the way in which students use their unstructured or "free" time. It should be pointed out that the way in which students at North Miami Senior High School use this unscheduled time is mediated by the physical limitations of the school plant and the novelty of the unstructured time concept.

The following generalizations relative to student use of unstructured time seem valid:

1. Approximately one-third of each student's schedule is devoted to unstructured time.

2. There are approximately 500 to 700 students on unstructured time during each module.

3. Although the school is equipped to "hold" 500 to 700 students in some sort of independent situation during each module, many students are not able to avail themselves of particular kinds of study space such as laboratories or shops during their unscheduled modules.

4. Students seem to enjoy and appreciate their unstructured time. The two most general reasons they give for their satisfaction are:

   They appreciate the fact that they are being given more responsibility and being treated "more like adults."

   They indicate that it is easier for them to finish all of their work in school.

5. In general, students feel that they are learning more, or just as much, through independent study. Surveys of student grades seem to support this feeling.

6. In general, students feel that their attitudes toward studying have improved.

7. There is evidence that students spend approximately one-half of their unstructured time in study related activities and the other half either socializing with peers or at home.

8. Many students said that, because they have a large block of unstructured time very early in the morning, they prefer to sleep and do their studying later.

9. Students indicate that they do know where to get assistance from teachers during their unstructured time. There is evidence that they frequently take advantage of this assistance.

10. Students seldom seek assistance, advice or counseling from their guidance counselors during their unstructured time. Many students feel that they simply do not know their counselors well enough.

11. A very large proportion of students said that they "do not like" the library and seldom go there. They do, however, take books from the library. Students referred to the library as being "too formal," "too quiet," "straight-laced," and "creepy."

12. Students indicate that they are uncertain about how their unscheduled time should be spent beyond achieving specific course requirements. They say that:

    They seldom pursue topics other than homework.

    They seldom seek to achieve greater depth in class-related topics.

    They seldom read for recreation.

In interview, students were asked to suggest ways in which improvements could be made relative to unstructured time. Most students agreed on three points:

1. Students wish there were more places to go during their unstructured time. By and large, they do not enjoy going to the library, and resource centers are often full. They would like to have greater access to laboratories, shops, physical education facilities and independent study areas where they might be able to use media and other facilities.

2. They feel that some students are "ruining it for the rest of us." They think that the unstructured time of some students should be taken away.

3. They would like to be able to go home "officially" during large blocks of unstructured time.

*What Are All of Those Students Doing in the Halls?*

When one enters North Miami Senior High School, he immediately becomes aware that there are more students in the hallways than might be found in a school using a more traditional scheduling program. Because so many visitors wonder who these students are and what they are doing there, an attempt was made to provide answers to these questions. A number of interviewers were stationed throughout the building and on the school campus.

Structured interviews were conducted and other data were gathered about a large sample of students found in the halls and on the campus *during*, instructional modules. The following generalizations appeared:

1. Students found in the hallways during modules represent a cross-section of the academic continuum. They are not simply the students on the lower end of that continuum.

2. In almost every case the students were on unstructured time.

3. This sample of students indicated that they proportion their unstructured time in the same way as the general student population.

4. Perhaps the most interesting observation to come from this "hallway sample" was that almost all of these students fell into one of two rather discrete groups. One group of students had a very small amount of unstructured time (approximately 20 minutes) available at that moment; and said that they "really couldn't get started on anything" in that amount of time. Another group was found to be somewhere near the middle of a relatively large block of unstructured time (approximately 2 to 2-½ hours) and said that they were "taking a break" or "just goofing off for awhile." These seem to be two rather defensible positions.

*Large Group Sessions*

Large group presentation has become an important technique in individualizing instruction. It can be reasoned that if a good deal of curricular content can be presented to students in large groups, the time of many teachers made available by this procedure can be redirected toward working with individual students and small groups. It is crucial, however, that large group instruction be extremely well planned, articulated and executed. Student and teacher questionnaires and interviews were used and intensive observation was conducted in order to make the following observations relative to large group instruction at North Miami Senior High School.

1. In general, it appears that both teachers and students are satisfied with and can see definite value in large group activity.

2. Large group sessions are predominantly teacher-lecture sessions.

3. Although ample use is made of overhead projectors in large group sessions, use of other media devices, as well as the use of outside speakers, is limited.

4. The physical plant of North Miami Senior High School is not ideally suited to the use of large group instruction.

5. There is reason to believe that not all teachers are performing competently in large group situations.

6. Many teachers indicated they enjoy "being a ham;" they enjoy making the large group presentation.

7. As seen by teachers, the major advantages of large group instruction result from the general time-saving aspects:

The convenience of not having to repeat certain common content, directions and so on during the day.

The increase in time to work with small groups and individuals.

The increase in planning time.

8. As seen by teachers, the major disadvantages of large group instruction are:

Physical plant limitations: poor acoustics, lack of air-conditioning, and poor lighting.

Lack of sufficient audio-visual equipment.

Lack of personal contact with students in large groups.

Difficulty in holding student attention. (This problem was identified more by teachers who also felt that large group sessions lacked "the personal touch" and who did not particularly enjoy making large group presentations.)

9. As seen by students, the major advantages of large group instruction are:

The opportunity to hear different teachers lecture.

The opportunity to develop "note-taking" and listening skills.

The sense of independence, not feeling "under the thumb" of particular teachers.

10. As seen by students, the major disadvantages of large group instruction are:

Physical plant limitations. (Students indicated the same dissatisfaction with their physical surroundings in large group sessions as did teachers.)

Lack of coordination and articulation between the presentations of various teachers.

Material often not presented in an interesting way. (Students said they are sometimes bored.)

Poor behavior of some students in large group sessions.

*Small Group Sessions*

From evaluation of the results of student and teacher questionnaires and interviews, as well as from observations made by the writers, the following general observations relating to small group work at North Miami Senior High School seem to be valid:

1. In general, small group sessions relate well to large group presentations.

2. Teachers and students express general satisfaction with small group sessions, state

that they feel comfortable in small group activities, and believe that small group sessions offer definite advantages when compared to last year's 55-minute "regular" class sessions.

3. There seems to be a general feeling of security and cohesion among students in small groups.

4. Teachers appear to make good use of small group sessions for demonstration purposes. Many of these demonstrations, however, might be presented more appropriately in the large group setting.

5. Many small group sessions seem to be lecture oriented. There is indication that many teachers lack necessary knowledge about the purposes of small group activity and the dynamics of small group work.

6. In many cases "homework" is done in small group sessions.

7. There is very little student led discussion. Most teachers seem to feel uncomfortable if they are not controlling the discussion.

8. There is very little student reporting in small group sessions.

9. There appears to be an inordinate amount of time spent on individual help in small group sessions.

10. In general, although teachers and students express satisfaction with small group sessions, it does not appear that such basic purposes of the small group activity as in-depth discussion, evaluation of one's thinking, personal interaction, and a broadening of student interest, are being fully achieved.

*Use of Performance Based Curriculum Materials*

Individual study materials or guides designed to enable a student to move steadily toward individual and general curricular goals at his own rate can be an integral part of a successful flexible scheduling program. The use of such materials at North Miami Senior High School was examined primarily through teacher and student interviews, questionnaires and observation in student study areas.

1. The curriculum at North Miami Senior High School has not been translated adequately into performance levels which would allow performance criteria and sequential learning activity packages to be developed.

2. Learning activity packages are, however, in use. They appear to be enjoying their greatest use in the area of vocational education.

3. Approximately half of the teachers in areas other than vocational education state that they are using learning activity packages.

4. In some areas no learning activity packages have been developed.

5. Many teachers state that they are unfamiliar with the process of developing learning activity packages. Others feel that they do not have adequate time to develop these packages.

6. Well over half of the teachers using learning activity packages assign them to all of their students at the same time and expect them all to complete them at the same time.

7. Teachers who are using learning activity packages feel that they are beneficial.

8. Students using learning activity packages seem to enjoy them very much and state that the materials make it "easier" for them to learn.

## ADMINISTRATION

The decision to place upon themselves even greater burdens in an effort to improve their school attests to the high professional ideals and dedication of building and district office administrators and the supervisory staff of North Miami Senior High School.

Although no specific attempt was made to evaluate the effectiveness of that administrative organization, there is every indication that the Northeast District Office and the North Miami Senior High School administrative and supervisory organization is staffed by highly competent educators. An attempt was made, however, through unstructured interviews, casual discussions, and quasi-structured interviews with administrators and supervisory personnel to assess the degree of philosophic and professional congruence among district office administrators, building administrators and building supervisory personnel concerning the principles, practices and goals of the flexible scheduling program.

In the writers' opinion three general findings emerged:

1. The entire building and district office administrative and supervisory staff appears committed to and excited about the new program. Some administrators and supervisors who admitted to initial reservations about the program say that they have come to see the inherent possibilities in flexible scheduling for improving the school's instructional program. In general, the administrative staff is committed to the program, feels that it is working well in its first year of operation, and seems dedicated to further improvement.

2. There is evidence that full agreement has not been reached among administrators on some of the philosophic and educational assumptions of the program; student and teacher unstructured time; student freedom; acceptable behavior, etc.

3. All administrators indicate concern for improving school-community relations and communication.

*Recommendation*

High priority should be given to achieving greater philosophic and educational agreement among the administrators and supervisors responsible for the North Miami Senior High School program. It is further recommended that this agreement should not be reached on the basis of global and perhaps ambiguous philosphic and educational postulates. Rather, administrative agreement should be achieved on specific questions such as: Specifically, what should the parameters of student freedom be? What specific kinds of activities constitute acceptable use of unscheduled time?—for students? for teachers?

## COMMUNICATION

Essential to the successful operation of any school program is a carefully planned and maintained system of communication. In a school as large as North Miami Senior High School, given the initiation of the new flexible scheduling program, communications between administrators, between administrators and teachers, between departments, between the high school and its feeder schools, and between the school and the community becomes even more critical.

The writers examined channels and instruments of communication which had been used at the school during the year. It was the opinion of the writers that, although attempts at inter- and intra-school communication and communication with the community were being made in standard ways, more precise and carefully planned communication strategies are needed. This opinion was given further support by findings from teacher questionnaires and a "problem survey" conducted with the staff of the school. The following recommendation may prove helpful in establishing such a system.

*Recommendation*

Consideration should be given to appointing a staff member with primary responsibility for:

1. Intra-school communication—between departments, administration and staff, between staff and student body.

2. Inter-school communication. A more precise plan for communicating with feeder schools should be developed.

3. School-community communication. High priority must be given to developing an ongoing system of *two way* communication with the community.

In developing this report the writers considered recommending several particular communication plans and devices. It was decided, however, that a list of particulars relating to such a pervasive problem would not be desirable. It is important, however, that some person or group be given primary responsibility for developing a comprehensive and ongoing communication program. This recommendation should be given high priority.

## GENERAL OBSERVATIONS AND RECOMMENDATIONS

In general, it can be said that North Miami Senior High School has been successful with its first steps in adopting a new design in secondary education. There are, of course, many ways in which the program might be improved. The administrative and teaching staff at North Miami Senior High School is dedicated to this improvement, and the new flexible scheduling system will provide a framework in which needed changes can be made. Herein lies the most important value of the new program—its compatability with change.

*General Observations*

1. The administrative staff, the teaching staff and the students at North Miami Senior High School are very happy with the new program and want to continue its use.

2. The achievement grades, conduct grades and attendance of students have not been lowered by the new program. If anything, there is a general indication of improvement.

3. Out-of-class discipline problems seem to have increased.

4. The professional staff has not yet reached full agreement on specific questions relating to acceptable student behavioral norms and profitable use of unstructured time. Neither is there full agreement as to what constitutes profitable use of teacher time.

5. The staff has not achieved full competence in handling the many and varied new expectancies placed upon them.

6. Not all students are adequately equipped to accept the responsibilities placed upon them under the new program. The majority of the students are, however, accepting this responsibility in a very mature way.

7. The total school staff, professional, para-professional and clerical, is not, as yet, sufficiently "tailored" to the demands of the program to maximize its input-output efficiency. Many clerical and para-professional tasks, for instance, are being done by master teachers, while many tasks demanding a high degree of professional knowledge and insight are being done by less qualified professionals and, in some cases, para-professionals.

8. The school's curriculum has not yet been so defined as to make it compatible with the notion of continuous and independent student growth. There are also articulation problems among individuals responsible for large group presentations and for coordinating large group presentations with the independent study program.

9. Although changes have been made, the physical plant still is not sufficiently suited to carrying out the many new kinds of activities inherent in the new program.

10. The community still is somewhat critical of the new program.

11. The concept of continuous student growth through independent study, employing "performance based curriculum materials," is just beginning to find its way into practice.

12. The variety of instructional materials and equipment at the school is not adequate to the demands of the new program.

*General Recommendations*

1. Consideration should be given to a differentiated staff at North Miami Senior High School. Many teachers express satisfaction with large group work while other teachers are happier and more effective in small group situations and working with individual students. Differentiated staff teachers could better develop skills related to specific teaching expectancies. This recommendation should be given immediate consideration.

2. Consideration should be given to the long term development of the total professional, para-professional and clerical staff. The possibility of differentiating staff, not only on the basis of tasks but also in terms of competence and, hence, salary levels, should be studied. The notion that every teacher must be a "master teacher" is no longer defensible. Under the direction and coordination of master teachers, many instructional and quasi-instructional tasks can be carried out by larger numbers of younger teachers, interns, and para-professionals. Monies gained from achieving this kind of "professional balance" in turn could be channeled into a more adequate clerical and supportive staff, which would further increase total staff efficiency. It is the writers' opinion that this recommendation could be achieved within present fiscal boundaries.

3. High priority should be given to an extensive program of curriculum development. Some guidelines for such a program might be:

    a. The establishment of a curriculum planning council. Members of this council should represent major facets of the school organization: Each department, guidance, building and district office administration, and the community. This council should evaluate all aspects of the school curriculum which cross departmental lines, coordinate all-school curriculum development activities and make recommendations to the school principal. It should have an established constitution clearly specifying its tasks and the parameters of its responsibility. Initial council members should be elected by the school staff. The council should have a rotating membership to assure its continuity.

        The curriculum planning council, in turn, should establish the following standing committees:

            *Humanities and related areas*–language arts, social studies, foreign languages, art, music and other related areas.

            *Mathematical and Physical Sciences and related areas.*

            *Life Skills and related areas*–Industrial arts, home economics, vocational and technical education and related areas.

The purpose of these three committees would be to survey and make recommendations to the curriculum planning council about needed curriculum development activities in each of the above general areas. These recommendations, in turn, would be placed in priority by the curriculum planning council. In this way needed curriculum development work could be achieved systematically.

Other standing committees reporting to the curriculum planning council should be:

*Communications*—Intra-school, inter-school, school-community.

*Program evaluation*—To provide an ongoing evaluation of the instructional program and to supply needed data to other committees, to administration, and to make recommendations to the curriculum planning council.

*Staff development*—To make recommendations for improving the professional staff, inservice training and staff problems.

*Student affairs*—A committee of students to advise the curriculum planning council of student opinions andattitudes.

The administration should make time available for the curriculum planning council to meet in order to carry out its tasks.

b. Emphasis should be placed upon describing the total school curriculum in terms of carefully defined levels of student performance, which in turn should be translated into behaviorally stated, continuous growth performance criteria.

c. Emphasis should be placed upon the development of independent study materials in each area which are related to these performance levels.

d. Resource unit development, relating basically to the preparation and collection of subject matter, materials, devices and ideas for large and small group activities should be undertaken.

e. Consideration should be given to extensive curriculum development activities during the summer months.

4. A continuous program of inservice training of staff should be initiated. This program should emphasize two areas:

The development of staff skills relative to specific large group, small group, and cooperative planning.

Understanding the concept of continuous progress, the performance based curriculum and the construction and use of appropriate independent study materials.

5. An extensive and ongoing program of school community relations should be

begun immediately. Consideration should be given to identifying a person with major responsibilities in this area. A functional system of *two way* communication with the community should be established.

6. A plan for more careful integration of the guidance department into the total instructional program should be developed. The supportive role of the counselor as a supplier of diagnostic information about students should be emphasized. Effort also should be made to create a more intimate relationship between counselors and the student body. The use of greater numbers of para-professionals to relieve counselors of more pedestrian activities might be considered in achieving this end.

7. The program of physical plant improvement should be continued. Some guidelines for future developments might be:

   Fewer walls should be built. Greater use should be made of easily moved partitions.

   Space which is essentially "laboratory" in nature should be large, open, and partitioned into *a priori* dimensions.

   Large group areas should be improved by treating them acoustically, improving the lighting and sound arrangements, and installing air-conditioning.

   Although the writers, without more extensive study, do not feel justified in making specific recommendations about independent study space, there does appear to be a problem related to this physical plant consideration. Careful study of independent study space should be undertaken, relating to three general questions:

      Is there a sufficient amount and variety of independent study space available at any given time, including a place where a student can be alone?

      Is there sufficient laboratory and shop space available during each module?

      Are the places where students can go such that students would want to go there? Are they comfortable and pleasant places to be?

   Future building and revision plans should include increasing the amount of space for media distribution facilities and curriculum preparation areas.

8. Methods of improving the entire educational media program should be developed. Although fiscal limitations might not permit large-scale installations at the present time, the increasing sophistication of the North Miami Senior High School program will cause greater demands for media services. Future plans might include three general considerations:

   Installation of a teacher access, multi-media distribution system throughout the building. This would be a multi-channel, closed circuit, cable distribution system in which various kinds of media could be delivered, upon teacher request, to any location in the building.

Development of a large and comprehensive media library using video tape as a primary storage vehicle.

Development of a random access media system for student independent study. Although the installation of this type of facility might not be feasible at present, it should be included in the total media blueprint.

9. Methods should be developed for identifying those students who have difficulty in planning for and using their unscheduled time. Procedures should, in turn, be instituted for helping those students to develop better work-study skills. A doctoral study is presently under way at the University of Miami, investigating different ways in which students might be helped to use their unscheduled time more constructively. The results of this study perhaps could provide guidelines toward achieving this end. Increased emphasis on the development of independent study materials will also be beneficial in terms of this problem. There is often a tendency for these kinds of efforts to take on punitive overtones—this should be guarded against.

10. The North Miami Senior High School program, specifically the responsibility placed upon students to make decisions about their educational and social activities, is based upon sound educational and psychological thinking—sound thinking which appears to be producing desirable results. The great majority of North Miami Senior High School students are learning to make mature and insightful decisions and behave responsibly. A few students, however, are not, and the visibility of these few is causing community and staff criticism. This criticism could well endanger the entire program at North Miami Senior High School. This consideration, along with the school's moral responsibility to parents and legal responsibility for the safety and well being of students, causes the writers to make a most difficult recommendation.

    It is recommended that a very sensitive and subtle system be developed for assuring the presence and well being of students, without removing the benefits to be derived from the increased responsibilities given to them. Intensive study should be given to the development of such a system to avoid jeopardizing the very essence of the new program. It is further recommended that the student body be brought meaningfully into the development of such a system and perhaps into the maintenance of the system once developed. The system should be developed around two main points: The physical well being and safety of students, and the ability of the school, within some reasonable amount of time, to locate a student.

11. Efforts should be made in future years to provide individual students with more usable portions of unstructured time. Very small as well as exceedingly large blocks of unstructured time appear quite difficult for students to use. In the future, this consideration might become a priority parameter with which the computer must deal before going on to other program or space considerations.

12. The possibility of opening certain areas of the building in the evening should be studied. With adequate supervision, the availability of independent study, shop, laboratory, music and art space would be particularly desirable.

13. The feasibility of generating the North Miami Senior High School schedule using Dade County Board of Public Instruction computers should be studied. Contracts also might be made with local universities in terms of generating the schedule there and also making this service available on a wider basis in South Florida.